

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 58-109513

(43)Date of publication of application : 29.06.1983

(51)Int.Cl. C08F136/06
C08F 4/52
C08F 6/10

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(54) PRODUCTION OF REINFORCED POLYBUTADIENE RUBBER

(57)Abstract:

PURPOSE: To obtain efficiently the titled rubber with excellent physical properties, by dissolving 1,3-butadiene in an inert organic solvent, subjecting the solution to a 1,4-polymerization reaction in the presence of a cis-1,4-polymerization catalyst and subjecting the mixture to a 1,2-polymerization reaction after the addition of a specified 1,2-polymerization catalyst.

CONSTITUTION: 1,3-Butadiene is dissolved in an inert organic solvent. The solution is further mixed with an organoaluminum compound of formula I, wherein R is a 1W6C alkyl, phenyl, or cycloalkyl, and a cobalt compound which constitute a cis-1,4-polymerization catalyst, and subjected to a 1,4-polymerization. After the addition of a 1,2-polymerization catalyst obtained from an organoaluminum compound of formula II and carbon disulfide, the reaction mixture is

I

II

Al R₂ X

Al R₂

subjected to a 1,2-polymerization reaction to form the purpose polybutadiene rubber consisting of 5W30wt% boiling h-hexane-insoluble portion and 95W70wt% soluble portion. Then, the unreacted 1,3-butadiene and the inert organic solvent are distilled, recovered and recirculated.